South Dakota Clean Water Act Section 303(d) Program
Long-Term Vision Strategy
March, 2016

The Clean Water Act Section 303(d) provides for an opportunity to more effectively restore and protect South Dakota's waters by using a systematic process of prioritizing Total Maximum Daily Load development and implementing alternative approaches and protection activities. A Long-Term Vision (hereafter referred to as the Vision) has been developed by the EPA and six actions have been identified as being important to this process. South Dakota's strategy includes the six actions discussed below.

1. Engagement

The Vision for the CWA 303(d) Program asks EPA and the states to actively engage the public and other stakeholders to improve and protect water quality, as demonstrated by documented, inclusive, transparent, and consistent communication; requesting and sharing feedback on proposed approaches; and enhanced understanding of program objectives.

South Dakota uses multiple means to engage the public and stakeholders and these will be used as part of the Vision. The Nonpoint Source Task Force will be a primary means of getting information about the Vision to the stakeholders. The NPS Task Force is a citizen's advisory group containing approximately twenty- five agencies, organizations, and tribal representatives. The NPS Task Force meetings are open to the general public. The NPS Task Force provides a forum for the exchange of information and activities about NPS related activities as well as providing recommendations for projects applying for CWA Section 319 funds. A presentation about the Vision was given by DENR to the NPS Task Force on December 9, 2014. The EPA also participated in the meeting and responded to questions during the presentation. There was much discussion of the Vision, the TMDL Prioritization Scheme, and how the Vision would impact NPS Implementation Projects. A presentation was also given during the NPS Coordinators meeting on April 22, 2015. Additional presentations about the Vision will occur as needed.

A September 2015 EPA/State joint Nonpoint Source Pollution and Water Quality Meeting was held in Rapid City, South Dakota and brought together the states in EPA Region VIII as well as other regional interests. The Vision plans for each state was presented and each state responded to questions/comments about their Vision plan.

The public notice process used to announce the availability of the Integrated Report is the primary forum used to engage the public regarding the Vision Strategy. The public notice process allows the public and stakeholders the opportunity to formally comment on contents of the IR and the Vision Strategy. Additional efforts to inform the public and stakeholders about the Vision will occur in response to requests by stakeholders and the public.

Some elements of the Vision, such as Alternative or Protection activities, may be incorporated into NPS Implementation projects. If these projects request CWA Section 319 funds, these projects will be presented to the NPS Task Force as well as the South Dakota Board of Water and Natural Resources for review and approval of funding. This provides another opportunity for public comment. The Vision Strategy will also be included in the South Dakota NPS Management Plan.

2. Prioritization

The TMDL prioritization process used for the Vision is a subset of the TMDL prioritization of 303(d) listed waters.
The Vision priority waters are those not supporting their designated beneficial uses for bacteria, total suspended solids, temperature (in waters assigned coldwater fisheries), chlorophyll a, or mercury in fish tissue. South Dakota's Vision currently contains the waters and causes presented in Table 5.

Table 5: South Dakota Vision Priority Waters

Assessment Unit ID	Assessment Unit Name	Cause Name
SD-BA-L-WAGGONER_01	Waggoner Lake	Chlorophyll-a
SD-BF-L-NEWELL_01	Newell Lake	Mercury In Fish Tissue
SD-BF-R-BEAR_BUTTE_01	Bear Butte Creek	Temperature
SD-BF-R-BEAR_BUTTE_02	Bear Butte Creek	Temperature
SD-BF-R-BELLE_FOURCHE_01	Belle Fourche River	Escherichia Coli
SD-BF-R-DEADWOOD_01	Deadwood Creek	Escherichia Coli
SD-BF-R-WHITEWOOD_01	Whitewood Creek	Temperature
SD-BF-R-WHITEWOOD_04	Whitewood Creek	Escherichia Coli
SD-BF-R-WHITEWOOD_06	Whitewood Creek	Escherichia Coli
SD-BS-L-BITTER_01	Bitter Lake	Mercury In Fish Tissue
SD-BS-L-BULLHEAD_01	Bullhead Lake	Chlorophyll-a
SD-BS-L-ISLAND_N_01	North Island Lake	Mercury In Fish Tissue
SD-BS-L-LARDY_01	Lardy Lake	Mercury In Fish Tissue
SD-BS-L-LONG_COD_01	Long Lake	Mercury In Fish Tissue
SD-BS-L-MID_LYNN_01	Middle Lynn Lake	Mercury In Fish Tissue
SD-BS-L-MINNEWASTA_01	Minnewasta Lake	Mercury In Fish Tissue
SD-BS-L-MINNEWASTA_01	Minnewasta Lake	Chlorophyll-a
SD-BS-L-OPITZ_01	Opitz Lake	Mercury In Fish Tissue
SD-BS-L-REID_01	Reid Lake	Mercury In Fish Tissue
SD-BS-L-SWAN_01	Swan Lake	Mercury In Fish Tissue
SD-BS-L-TWIN_01	Twin Lakes/W. Hwy 81	Mercury In Fish Tissue
SD-BS-L-TWIN_02	Twin Lakes	Mercury In Fish Tissue
SD-BS-R-BEAVER_02	Beaver Creek	Escherichia Coli
SD-BS-R-BIG_SIOUX_01	Big Sioux River	Escherichia Coli
SD-BS-R-BIG_SIOUX_05	Big Sioux River	Total Suspended Solids
SD-BS-R-BIG_SIOUX_06	Big Sioux River	Total Suspended Solids
SD-BS-R-BIG_SIOUX_13	Big Sioux River	Total Suspended Solids
SD-BS-R-BIG_SIOUX_14	Big Sioux River	Total Suspended Solids
SD-BS-R-BRULE_01	Brule Creek	Escherichia Coli
SD-BS-R-BRULE_01	Brule Creek	Total Suspended Solids

SD-BS-R-EAST_BRULE_01	East Brule Creek	Total Suspended Solids
SD-BS-R-SIXMILE_01	Six Mile Creek	Escherichia Coli
SD-BS-R-SIXMILE_01	Six Mile Creek	Total Suspended Solids
SD-BS-R-SKUNK_01	Skunk Creek	Escherichia Coli
SD-BS-R-SKUNK_01	Skunk Creek	Total Suspended Solids
SD-BS-R-UNION_01	Union Creek	Total Suspended Solids
SD-CH-R-BATTLE_01_USGS	Battle Creek	Total Suspended Solids
SD-CH-R-BATTLE_02	Battle Creek	Temperature
SD-CH-R-CHEYENNE_02	Cheyenne River	Escherichia Coli
SD-CH-R-CHEYENNE_02	Cheyenne River	Total Suspended Solids
SD-CH-R-GRACE_COOLIDGE_01	Grace Coolidge Creek	Temperature
SD-CH-R-GRIZZLY_BEAR_01_USGS	Grizzly Bear Creek	Temperature
SD-CH-R-RAPID_04	Rapid Creek	Escherichia Coli
SD-CH-R-SPRING_01	Spring Creek	Escherichia Coli
SD-CH-R-SPRING_01	Spring Creek	Total Suspended Solids
SD-JA-L-BIERMAN_01	Bierman Dam	Chlorophyll-a
SD-JA-L-CARTHAGE_01	Lake Carthage	Chlorophyll-a
SD-JA-L-ELM_01	Elm Lake	Mercury In Fish Tissue
SD-JA-L-ROSETTE_01	Rosette Lake	Chlorophyll-a
SD-JA-L-TWIN_01	Twin Lakes	Chlorophyll-a
SD-JA-R-FIRESTEEL_01	Firesteel Creek	Escherichia Coli
SD-JA-R-JAMES_08	James River	Total Suspended Solids
SD-JA-R-JAMES_09	James River	Total Suspended Solids
SD-JA-R-JAMES_10	James River	Total Suspended Solids
SD-JA-R-JAMES_11	James River	Total Suspended Solids
SD-JA-R-WOLF_01	Wolf Creek	Escherichia Coli
SD-JA-R-WOLF_02	Wolf Creek	Escherichia Coli
SD-MI-L-HURLEY_01	Lake Hurley	Mercury In Fish Tissue
SD-MI-L-POCASSE_01	Lake Pocasse	Chlorophyll-a
SD-MI-L-ROOSEVELT_01	Roosevelt Lake	Mercury In Fish Tissue
SD-MN-R-WHETSTONE_S_FORK_01	South Fork Whetstone River	Escherichia Coli
SD-MN-R-WHETSTONE_S_FORK_02	South Fork Whetstone River	Escherichia Coli
SD-MN-R-YELLOW_BANK_N_FORK_01	North Fork Yellow Bank River	Escherichia Coli
SD-MN-R-YELLOW_BANK_S_FORK_01	South Fork Yellow Bank River	Escherichia Coli
SD-MU-L-COAL_SPRINGS_01	Coal Springs Reservoir	Mercury In Fish Tissue
SD-NI-L-RAHN_01	Rahn Lake	Chlorophyll-a
SD-VM-L-THOMPSON_01	Lake Thompson	Chlorophyll-a
SD-VM-R-LONG_01	Long Creek	Escherichia Coli
SD-VM-R-VERMILLION_03	Vermillion River	Escherichia Coli
SD-VM-R-VERMILLION_E_FORK_02	East Fork Vermillion River	Escherichia Coli
SD-VM-R-VERMILLION_WEST_FORK_01_USGS	West Fork Vermillion River	Escherichia Coli

3. Protection

This element is intended to encourage management actions that prevent impairments to waters not currently impaired. South Dakota is receptive to this concept and will consider providing technical or financial assistance to these types of projects. There is no anticipation of a large number of requests for “protection” activities and DENR will consider each as they become known.

Requests for funding for CWA Section 319 funds will follow the same protocols as other projects requesting these funds and the "protection" activities must be identified as such. Protection activities within an existing implementation project must also identify those activities as "protection" activities.

4. Integration

The Department of Environment and Natural Resources has very good working relationships with other programs, and regional, state and federal agencies.

The NPS Task Force is a major forum for interaction between the various federal, state, regional, and local agencies as well as the general public.

The Natural Resources Conservation Service (NRCS) is the primary federal agency that DENR interacts with on nonpoint source implementation projects. CWA Section 319 funds are often used in concert with NRCS funds to more efficiently use both funding sources to combat NPS pollution. The U.S. Forest Service, Bureau of Reclamation, or Bureau of Land Management may also be involved in DENR's NPS control effort if activities will occur or impact lands managed by these agencies. In addition, the U.S. Geological Survey provides much needed data about water flow and water quality in certain rivers and streams in South Dakota and has been a partner in various water quality assessment activities.

Regional or local agencies are often project sponsors for NPS assessment or implementation projects. Water development districts, conservation districts, cities, and locally based partnerships have all interacted with DENR and have integrated into NPS assessment and implementation projects.

Universities have been involved in South Dakota's NPS control effort through research studies that help the state assess water or biological quality of our streams (e.g. the Intermittent Stream Study or the Northern Great Plains Reference Site Development Project). It is anticipated that this effort will expand to include a Northwestern Great Plains Reference Site Development Project.

5. Alternatives

Alternative approaches that incorporate adaptive management or are tailored to specific circumstances where such approaches are better suited to implement priority watershed or water actions to restoration may be used in addition to TMDLs. Generally, DENR currently requires a TMDL to be developed before funds are allocated towards a Nonpoint Source 319 Implementation Project. Henceforth, consideration will be given to projects or cases where a relatively simple or straight-forward solution can be reached without going through the TMDL development process.

Requests for funding for CWA Section 319 funds will follow the same protocols as other projects requesting these funds and the "alternative" activities must be identified as such.

DENR also supports an Information and Education Program that may be useful in circumstances where public outreach and education can resolve an issue.

6. Assessment

The goal of this element is to identify the extent of healthy and CWA Section 303(d) impaired waters in each State's priority watersheds or waters through site-specific assessments.

South Dakota uses a number of methods and data sources to assess waters included in the Vision and they are highlighted below.

- Fixed ambient stream monitoring of rivers and streams. This Program samples the major rivers in the state and analyzes the samples for a select suite of parameters;
- Data are also obtained from regional sources or federal agencies (e.g. the U.S. Geological Survey or the volunteer lake monitoring program);
- Lakes are sampled as part of a statistically based Statewide Lakes Assessment (SWLA) each year. Usually 50 lakes are randomly selected and sampled for a standard suite of parameters;
- Intensive water monitoring is sometimes conducted to assess specific point or nonpoint source problems;
- Site-specific assessments are often used during TMDL studies if more general data methods/surveys do not provide adequate data. NPS implementation projects may also use site-specific studies to document water quality improvements due to NPS implementation project activities.

South Dakota's Vision and its list of waters needing TMDLs are primarily based on data gathered in the first three bullets. Stream data are usually available for the major streams but other streams may not have any data. Lakes are sampled randomly as part of the state's Statewide Lakes Assessment so individual lakes may or may not have enough data to develop a TMDL. So intensive monitoring and site-specific assessments are initiated when data are lacking for a particular waterbody or if specific information is needed when cause/effect relationships are sought. DENR has scheduled ten lakes for TMDL development that are impaired by chlorophyll-a as part of the Vision and intensive water quality sampling will likely be scheduled in the upcoming years.

In addition, DENR is working with EPA to develop scientifically defensible thresholds for chlorophyll-a and/or nutrients (nitrogen and phosphorus) in lakes. Thresholds for lakes in Ecoregions 17 and 43 will be developed first and thresholds for lakes in the remaining ecoregions will be completed at a later date. Numeric targets for nutrients in streams may also be developed in the future.

South Dakota has a well-documented history of doing site-specific assessments and will continue to develop and schedule assessment projects where data are deemed lacking for waters needing a TMDL. Site-specific assessments are either done by DENR

personnel if the waterbody is within reasonable travel distance or by a regional entity/contractor if funds are available and DENR involvement is not the best option. Computer modelling, scientific literature, and reference conditions may also be used to assess waters.

Vision Summary

The South Dakota strategy for the Long-Term Vision under the CWA Section 303(d) Program contains the six elements stressed by EPA. The primary goal is to prioritize TMDL development for the Vision where implementation activities can be focused to provide a better chance of improving water quality. However, much time, effort, and funds have been spent assessing and working on other TMDLs, so those TMDLs will also play into South Dakota's broader TMDL development effort.